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ABSTRACT

A variety of topics related to innovative uses of media in international development are addressed in this newsletter, which includes the following articles: "The Radio Mathematics Project: New Examples of Technology Transfer," by Klaus Galda; "An Overview and Guide: Planning Instructional Radio," by Maurice Imhoof; "Nyegezi School of Journalism Spearheads Training of Development Communicators," by William M. F. Shija; "The School Classroom and the Radio Classroom," by Esta de Fossard; "Innovations in Education: Hand-Held Electronic Aids in Lesotho," by Stephen Anzalone; "Telecommunications Link Workshops in Africa, Asia, Latin America;" "Radio Training: Who for What," by Michael Laflin; "The Idea of Visual Literacy," by George McBean; and "Perspectives on Communication Problems in the English-Speaking Caribbean," by B. A. Okwesa. In "On File at ERIC," Barbara Minor reviews five recent ERIC entries. Judy Brace reviews a UNESCO series in "Good Things from UNESCO," and four books on issues related to communications in international development are reviewed in "A Communicators Checklist." (LMM)

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development communication report

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The Radio Mathematics Project: New Examples of Technology Transfer

by Klaus Galda

In 1974, the Bureau for Science and Technology of the Agency for International Development established the Radio Mathematics Project (RMP) in Nicaragua. The project was to be administered jointly by the Ministry of Education of the Nicaraguan government and by the Institute for Mathematical Studies in the Social Sciences (IMSSS) at Stanford University. The goal of the RMP was to bring high quality, low cost mathematics instruction to Nicaraguan primary schools, particularly the more remote and more disadvantaged rural schools. The use of daily radio mathematics lessons was seen by AID and the Nicaraguan government as a way of overcoming the two main problems in rural schools—insufficiently trained teachers and lack of textbooks or other educational materials.

Although the RMP was specifically set up within a single country and within the formal school system, the possibilities of transferring this work were clearly seen at the outset. In fact, the project was only a first step in a larger AID effort to use development communications to help solve educational problems in the Third World. There are several levels at which the work of the RMP could be expanded. The first level is to simply adapt (or if possible use in exactly the same form) the mathematics programs produced in Nicaragua for use in primary schools in other developing countries. Another level is to adapt the programs to use in educating out-of-school children in a nonformal education setting. Yet another level is to adapt the content of the mathematics lessons, and change some of the style of the programs so that they would be suitable for adult literacy/numeracy projects. And finally, it was hoped that the methods of research, evaluation, and production which evolved in the course of five years of work in the RMP in Nicaragua would prove to be useful in other educational projects not concerned with (or at least not solely concerned with) the teaching of mathematics. We will give examples from different countries of each of these levels of application.

Much has been written about the RMP (most of which is available from the Clearinghouse on Development Communication), and the purpose of the present report is not to give another description of the project, so I will limit myself to a short paragraph summarizing the results of the RMP. The project was operating in Nicaragua from 1974–1978 with assistance from AID and IMSSS, and continued by the Nicaraguan Ministry of Education without external assistance until all activities were disrupted by the revolution in Nicaragua in mid-1979. Although the mathematics programs were not revived after the revolution, staff trained by RMP produced nonformal educational programs using many of the same techniques. The RMP produced a complete set of radio mathematics programs and auxiliary print materials for the first four grades of primary school. Each lesson is a combination of a 25–30 minute radio program and a 15–20 minute session of teacher-led activities. The radio programs, which combine mathematics instruction with some entertainment, are generally in the form of a dialogue between the radio teachers and students in the classroom. The students are

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An Overview and Guide: Planning Instructional Radio

by Maurice Imhoof

Instructional radio projects fail if they are inadequately planned. They are poor radio, and they don't educate. Successful radio projects require comprehensive and complex planning. The instructional radio planning team must have knowledge and capabilities in a number of technical, social, and educational areas. Among other skills, the team must understand radio, curriculum design, the subject matter being taught, research and evaluation, and the environment in which the project operates.

Radio as a Medium

The decision to use radio as an instructional medium usually follows the larger educational planning strategy. Once a basic approach to educational planning has been selected and broad educational goals set, radio may be chosen as a cost-effective means of meeting some of the goals.

Facilities and personnel. Assuming radio has been wisely chosen, there are still a number of factors which need to be analyzed by a team member who is a radio specialist. The most obvious consideration is the inventory and evaluation of the facilities: studios; broadcast, recording, and transmission equipment; classroom radios; and so on.

The capabilities of broadcast personnel are another consideration. Personnel trained to make use of radio in a manner similar to that of the project design is essential. If such experienced radio broadcasters are not available, training of personnel must be implemented as a part of the project aims and design.

Users' experience. Initial radio lessons must teach the learners how to listen to the radio if they have no previous experience in listening to instructional radio broadcasts. Although the period of time required for such skill development may be brief, scripts written for

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Nyegezi School of Journalism Spearheads Training of Development Communicators

by William M. F. Shija

The Journalism Department at Nyegezi Social Training Institute in Mwanza, Tanzania, was started by Catholic missionaries in 1963. When, in 1981, a faculty committee reviewed the curriculum of the two-year diploma course in journalism, they came to the conclusion that the skills being taught were not relevant to local needs. They decided to change the traditional curriculum in order to emphasize communication for development.

The faculty concluded that, up to then, the traditional journalism instruction had been taught from a Western, urbanized perspective, an approach which they found inadequate and inappropriate to local East African conditions and demand for news.

This article, by the former head of the Journalism Department at Nyegezi, chronicles the changes made in that journalism curriculum, the reasons for those changes, and the effects of the new community-based approach to teaching journalism in a rural setting.

After the decision to restructure the curriculum in the Nyegezi Journalism School was made, the entire course of study was revised. We re-examined our curriculum and our student population, and we began to teach such subjects as News Reporting with the clear understanding that we were teaching reporting *from rural areas for rural consumption.*

Emphasis moved, therefore, from reporting mere "newness" to the communication of ideas and values for the purpose of developing our society. If it were to be useful, we decided, this kind of reporting should focus on agricultural activities, health projects, government services, and people's self-help schemes. To further the general knowledge of our trainees, the curriculum was expanded to include such subjects as development communication, economics, sociology and research methods, international communication, and management principles.

Our major addition was the subject of development communication. In teaching this subject, we had two objectives to accomplish. First, we wanted to impart practical knowledge about problems of communication for development purposes in a way that would assure the trainees' involvement; and, second, we wanted our training programs to get out to the masses in the rural areas we could reach.

As part of their preparation for community service, and as part of the training in development communication, students were required to plan, write, compile, and test a multi-media information campaign. Some of the campaigns carried out in nearby villages proved effective in influencing the people towards better agricultural productivity, improvements in health and sanitation, and improvement in childcare.

Clearly, our direction and efforts toward development communication did not end with a curriculum review. We launched a three-month specialized course in Rural Communication, first held from May through July 1982. This was the first course of its kind in East Africa, and our objective was to provide basic communication training to people who served communities in various rural settings.

New Emphasis on Fieldwork

Our initial training course was directed toward agricultural extension workers, rural health and nutrition workers, cooperative officers, adult education coordinators, rural newspaper personnel, mass media personnel, publishing house personnel, and church workers. The three-month program included at least one week of practical training in a field setting chosen by the trainee. The course participant had to go into the field and carry out a mini-research project on the importance of the mass and other media in daily life, and to identify the popular programs in the village, as well as the dominant medium there.

After this week in the field, the trainees were required to explore the possibilities of using the media to improve the daily lives of the villagers. Since journalism in a rural setting focuses on print material, the trainees encouraged the villagers to start some kind of newspaper for themselves, even if it meant a handwritten paper. Such a handwritten paper could be placed at a village center for the dissemination of information from within and without the village.

As part of the journalism school outreach, during the training of rural communicators, we visited nearby villages and we found that there were a number of youths who had the potential talents to start rural papers for their villages. Some of them had good enough handwriting, drawing, and art abilities to be able to undertake such projects.

At one village called Buhongwa, recognized as the best village in Mwanza District in 1981 in terms of agricultural production, political organization, health attention, and village education programs, the village leaders accepted our suggestion that some of their youths could be trained at our Institute to be village communicators.

At the end of the three-month rural communication course, the faculty and the trainees assessed and recognized the achievements of both the trainees and the communities involved. The evaluation exercise included a critical report by the trainees, guest lecturers' evaluation reports, and a departmental evaluation meeting.

While the course in general was rated to be highly successful, the most prevalent problems during the training centered around the lack of sufficient facilities, such as transportation, radios and radio cassettes, photographic and printing materials. However, it was clear from the evaluation of our objectives that we could integrate our training program into the overall development objectives of the country. The new directions in the curriculum were shown to be meaningful, to the regions involved as well as to the individual students. The Journalism Department and the Institute as a whole has now registered the Rural Communication Course to be a regular course, running from May to July every year. For more information write to: The Head, Journalism Department, Nyegezi Social Training Institute, P.O. Box 307, Mwanza, Tanzania; or to William M. F. Shija, 1223 Fairmont St. NW, Washington, D.C. 20009, USA. ■

William Shija was formerly the head of the Journalism Development Department at Nyegezi Institute in Tanzania. He is currently studying for a graduate degree in communications at Howard University, Washington, D.C.

Publications to Note

The Center for International Education at the University of Massachusetts is publishing a new series of technical field notes that many readers will find useful. An initial set of Technical Notes resulted from the landmark U-Mass Nonformal Education Project in Ecuador a few years ago. These new Notes (16-22) have been developed under the U-Mass Indonesia Nonformal Education Project, and are how-to booklets on such subjects as "using consultants for materials development," "designing and using simulations for training," ". . . a needs assessment technique," and "field training through case studies."

Health educators will be pleased to know of another Technical Note, on a "game of childhood diseases" that has been carefully developed so as to be both educational and playable. Technical Notes are not the only publications that the Center produces. A detailed implementation study of the Indonesian Nonformal Education Project is available, as is an excellent selection of in-depth studies, curriculum aids, and issue papers.

The publications list is available from the Publications Coordinator, Center for International Education, 285 Hills House South, University of Massachusetts, Amherst, Massachusetts 01003, USA. ■

By Judy Brace

The School Classroom and the Radio Classroom

by Esta de Fossard

Radio is a very effective medium for communication. In some places of the world, it is the only medium of education for children who live in very remote areas. In these cases, radio must become the school; the radio program must become the class.

It is important for the instructional radio script writers to be aware that they are primarily writing good lessons that will be delivered by radio, not *radio programs that are going to teach lessons. It can be helpful, therefore, to start by considering the components of a good classroom and then thinking about how these can be transferred to radio. The script writer who has not had experience as a classroom teacher would do well to watch a good teacher at work before undertaking the scripting—paying particular attention to the organization of the class and the lessons, and to the way the teacher interacts with the children.*

The following is a suggestion of how the various components of a good class can be reproduced on radio.

Attributes of a good classroom:

1. Organization
2. Discipline
3. Motivation
4. Care and concern

The radio classroom must seek to provide an environment like this. Some suggestions for how this can be done:

Regular Classroom	Radio Classroom
1. The teacher is in front. The children watch him/her for direction.	The radio is in front. Children focus their attention on radio. Blackboard can be beside radio, if possible. Children must have a point of focus.
2. The facilities and materials that children use are organized in shelves, boxes, cupboards etc.	Radio must provide the same type of "classroom" organization by creating segments marked with clear, distinct sound cues.
3. Classroom teacher requires silence while children work. Noise is seen as distracting.	The radio must provide periods of silence for work and for oral responses. While it is true that normal radio programs abhor "dead air," we must remember we are creating a class, not an entertainment. If pauses are to be long, then very soft, non-disruptive music can be used to fill them. If the same music is used in all work periods, it will not be so distracting.
4. The teacher uses *visual* cues to alert the children to what is going on. For example, while talking about using the math book, the teacher will hold it up.	The radio must replace visual cues with aural cues to assist children to anticipate and understand what is going on. For example—if children are required to use worksheets or exercise books, they can be given a short sound cue every time they are asked to use them.
5. The classroom uses one teacher only, sometimes assisted by an aide.	The radio should not confuse children by using too many different voices. Ideally there should be only two teachers in any one segment—so that modeling can take place and so that one teacher can give the questions; another give the answers—thus providing a further aural cue for the children.

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(**Galda** continued from page 1)

extremely active during the program, with a combination of frequent oral, written, and physical responses. A minimum of printed support material is used; in the first grade students receive individual worksheets, but after that there are no student materials to be distributed, with higher grades relying only on a teacher's guide, the blackboard, and student notebooks. The programs are designed to be used by even the most inexperienced and untrained teachers, and only a short one-day training course is necessary.

The project evaluation showed that the programs were quite successful in Nicaragua. Student achievement tests were given to those students using the radio programs and to a comparable control group. At every grade level the RMP students learned more mathematics than students in the regular schools. The programs were very popular with the students as well as most of the teachers. Although no attempt was made to attract out-of-school listeners, the RMP programs also had a sizable audience among adults and out-of-school children.

After IMSSS participation in Nicaragua stopped at the end of 1978, AID supported RMP dissemination activities for an additional two-and-a-half years until July 1981. During that time, IMSSS worked with the Ministry of Education in Thailand to adapt RMP programs, and also gave numerous seminars on the RMP in many countries.

Adaptation in Thailand

In Thailand we have an example of the first level of adaptation of the RMP programs. The programs are being used in primary schools in a country which is at a similar level of development (particularly in the rural areas) to Nicaragua, although the cultural traditions are very different. The World Bank, through its Fifth Education Project in Thailand, is supporting a massive effort to improve and expand educational radio. Among other aspects, this project is constructing a complete network of educational radio stations, which will cover more than 90 percent of Thailand. As part of this effort IMSSS worked with the Centre for Educational Technology (CET), a part of the Thai Ministry of Education, to develop primary school mathematics programs. This work began in July 1979. In the 1980–1981 school year, CET produced programs for second grade, and first grade programs were produced in 1981–1982, with a revision of the original second grade programs done in 1982–1983. During this time the programs were broadcast on an experimental basis only, in a total of 32 schools, half of which were in Bangkok and the other half in two remote provinces in the Northeast of Thailand. During the 1983–1984 school year CET is developing the programs for third

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Innovations in Education: Hand-Held Electronic Aids in Lesotho

by Stephen Anzalone

What the transistor did for radio, the microchip did for the computer. In developing countries, these innovations opened new possibilities for accessing and transmitting information essential for education and development.

Microchips have made possible the compact, battery-powered, and relatively inexpensive electronic learning aid. The use of the electronic aid in education in developing countries may in time make it the first cousin of the transistor radio.

The kinship between the two technologies is striking. Just as more developed countries did not fully exploit the potential of radio for instruction, largely because of the attractiveness of television, so too have the possibilities of microprocessor-driven learning aids been ignored by schools in these countries because of the greater capabilities offered by larger microcomputers.

Yet developing countries have found radio to be an effective means of instruction—better suited to their needs and budgets than television. The same may prove true for the less complicated and less costly learning aid that delivers an interactive medium for practice in skills necessary for literacy, numeracy, and learning a second language.

The Center for International Education at the University of Massachusetts has begun to investigate the possibilities offered by handheld electronic learning aids to support literacy instruction in developing countries. The Center, with a grant from AID's Office of Education and a donation of equipment from Texas Instruments, Inc., has established the Electronic Aids for Literacy Project to examine the effects of using electronic aids in literacy instruction.

The project will collaborate with the Lesotho Distance Teaching Centre and the Lesotho National Curriculum Development Centre in conducting a field test of electronic learning aids in five primary schools and in an activity for young people unable to attend school. The field experiment began during the end of August 1983 and ran for 12 weeks. The devices being tested are the small, handheld Speak & Read and Speak & Math learning aids manufactured by Texas Instruments.

The learning aids offer opportunities to improve skills in English and arithmetic. The Speak & Math can present 100,000 different arithmetic problems through a variety of instructional routines. The Speak & Read provides practice with letter-sound relationships, word patterns, word recognition, and vocabulary in English. The words instructed by the device can be expanded by insertion of one of eight plastic modules, which permits a total capacity of about 1500 words. The aids are designed to link synthetic speech to a visual display of words and numbers. In other words, they "talk." As the user proceeds through a drill, the device responds to both correct and incorrect answers and for many routines keeps score of correct and incorrect responses to a set of problems or questions.

In the Lesotho school experiment, pupils in Standards (grades) Three, Four, and Six are using the aids in groups of four for three to five hours per week during appropriate times in the school day. Pupils are tested weekly on arithmetic and English word recognition, depending on the aid used by their class. In the out-of-school activity, a group of about forty shepherd boys is using the Speak & Math in an attempt to strengthen arithmetic skills.

The field test in Lesotho hopes to answer the following questions:

- Do pupils adjust to the electronic voice of the aids?
- Can the voice be heard in what are sometimes noisy classrooms?
- How well do the electronic aids withstand the conditions found in a developing country?
- What would be the cost of the aids and batteries for a given unit of instruction?
- What age and ability groups might the aids serve?
- How do teachers and pupils react to the electronic aids over time?
- Does use of the aids contribute to improvement in arithmetic and recognition of English words?

The experience in Lesotho will try to discover what adaptations to existing models of the electronic aids and what locally specific supporting materials may be required for effective use of electronic aids in a developing country. And although the aids are being used as a general supplement to the existing instructional program, the experiment will explore with teachers how and where the aids might be used to reinforce specific parts of the curriculum.

At this writing, it is too early to report definite results. The first six weeks of the field test in Lesotho showed, however, a high degree of acceptance and involvement on the part of teachers and pupils. As with any potential innovation in education, what must be demonstrated is whether initial enthusiasm can be sustained and translated into real learning effects.

Even before the results are obtained and something is learned about what electronic aids can contribute as a supplement to instruction, it is difficult not to speculate about what effect the electronic aids would have if used in combination with their technological cousin, the transistor radio. Radio's rich environment for introducing new concepts and ideas and for exploring new meanings, together with the capabilities of electronic aids for providing an interesting way to practice skills with immediate and individual feedback, suggests an impressive potential that deserves to be further explored. ■

Stephen Anzalone is a senior researcher at the Center for International Education, University of Massachusetts, Amherst, MA 01003, USA.

Telecommunications Link Workshops in Africa, Asia, Latin America

Three regional workshops on the research management needs of food industries held simultaneously in Africa, Asia, and Latin America in May were linked together via computerized telecommunications. Sponsored jointly by the (U.N.) University and Canada's International Development Research Centre (IDRC), the workshops in Bogotá, Nairobi, and Singapore were able to communicate with one another on a daily basis the information and recommendations arising from each one's discussions.

The far-flung, virtually instantaneous exchange concentrated in particular on the research management needs of small-scale food industries and of research and development institutions. It is interesting to note that, while a number of recommendations were common to all three workshops, there were also differing approaches to various problems. The Latin American meeting laid a great deal of emphasis on contract research and on working closely with large corporations as well as seeking funds from governments. In Africa, greater stress was laid on governmentally supported research. In the Asian workshop, a mixed approach was advocated, with emphasis on the development of small and medium-scale industries that give due attention to traditional technologies.

All three workshops recognized the importance of regional and interregional cooperation. The proceedings will be combined, edited and published by the IDRC. ■

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Notice/Notice/Notice

We are moving! As of April 1st, 1984, our new address will be:

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c/o Clearinghouse on Development Communication
Academy for Educational Development
1255 23rd Street, NW
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On File at ERIC

Recent entries in the ERIC (Educational Resources Information Center) files reviewed in this column are concerned with the use of radio for teaching English, drama in nonformal education, technical cooperation among countries, communication policy-making and planning, and computer conferencing. All five are available on microfiche and four in paper copy from the ERIC Document Reproduction Service (EDRS), P.O. Box 190, Arlington, Virginia 22210, USA. Be sure to include the ED number.

- Christensen, Philip R. and Mugiri, Ephantus M. *The Intensive Use of Radio for Teaching English in Kenyan Rural Primary Schools. Exploring a Cost Effective Application of Educational Technology.* 1983. 24pp. (ED 228 837)

This paper explores the Radio Language Arts Project (RLAP), an application of instructional radio technology to the teaching of English as a foreign language. The advantages and disadvantages of the use of radio in education are noted, and successful realizations of radio's potential in Kenya and Nicaragua are described. The subject matter, English, is analyzed from the perspective of the Kenyan curriculum and the radio medium. The most significant instructional design principles used by the RLAP are enumerated, i.e., more intensive use of radio and for longer periods, cost control, systematic instructional development, provision for distributed learning and immediate reinforcement, and the teacher/radio partnership. The formative and summative evaluation strategies for the RLAP are also described, and the implications of the project are considered. This paper, presented at the Unesco/BREDA International Seminar on the Use of Appropriate Technologies in Education (Nairobi, Kenya, March 21-26, 1983), is available from EDRS in microfiche for 97¢ or in paper copy for $2.15.

- Gerace, Frank A. and Carkin, Gary. *Drama in Development: Its Integration in Non-Formal Education. Occasional Paper #4.* 1978. 20pp. (ED 232 830)

With their links to real life, drama and nonformal education (NFE) can be effective partners in achieving developmental goals. NFE's freedom from some of the structural features of formal schooling presents a dramatic opportunity for the arts, with their affective characteristics, to help in achieving affective goals of education and development. For example, education for socioeconomic development, a principal area of NFE, includes attitude change as a principal objective. If dramatic production is to be an effective element in NFE, it must be good theater and it must allow audiences to identify with the characters, situations, and dialogue of the presentation. To use drama for developmental purposes, national planners should collaborate with dramatic artists, educators, and existing governmental agencies in developing training programs and producing materials for the mass media to stimulate awareness of national problems and motivate action for change. Such action could be supported by formal education and other services. The results of such an integrated approach to national development could stimulate the work of artists and relate their work to the development process, ignite and unite the national spirit for purposes of development, and support the goals of formal educators through use of a nonformal educational strategy. Available from the NFE Information Center, Michigan State University, 237 Erickson Hall, East Lansing, MI 48824, USA (while the supply lasts), or from EDRS in microfiche for 97¢ or in paper copy for $2.15.

- *The Network of Educational Systems for Development in Central America and Panama Project, 1975-1979. An Experiment in Technical Cooperation among Countries.* 1980. 22pp. (ED 230 453)

The historical development and future goals of a Unesco project to establish a network of educational systems throughout Central America are described. This project began to search for solutions to regional social, economic, and educational development problems in 1975. The objectives of the project were to conduct a critical analysis of the socioeconomic situation in relation to educational needs in each subregion; provide support for renewal of formal and nonformal learning processes by developing curricular innovation; and train technical, administrative, and teaching personnel according to new educational and administrative trends. The project sought to organize technical and human resources within the formal educational systems, design entry points within the systems that would emphasize the role of decision-making centers, train national specialists, and make available the resources of the system to solve rural underdevelopment and underemployment. Other activities included curriculum development, identification of socioeconomic indicators for educational planning, and research on the position of organized groups in Central America regarding educational systems. In its next phase, the project will focus on putting results of research and program development into practice. This Unesco report is available from EDRS in microfiche only for 97¢.

- Rahim, Syed A, and others. *Planning Methods, Models, and Organization: A Review Study for Communication Policy Making and Planning.* 1978. 270pp. (ED 233 423)

Intended for researchers, policy-makers, and planners, the studies in this volume examine issues in communication policy and planning in developing nations. The five studies discuss (1) the organizational and methodological aspects of communication planning, including structure and organization, methods, and models; (2) the economics of communication, including the limitations of economic theory and inhibiting influences and innovations; (3) long-range communication policy and planning, including futures research and use of the Delphi technique in policy and planning; (4) lessons for communication planning in urban and regional planning methodology, including the planning process as it applies to communication planning; and (5) lessons for communication planning in educational planning, including educational planning models and indicators of effectiveness. This report from the East-West Center in Honolulu, Hawaii, which was prepared for Unesco, is available from EDRS in microfiche for 97¢ or in paper copy for $19.65.

- Mills, Miriam K. *Computer Conferencing for the Third World: Roadmap for the Future.* 1983. 17pp. (ED 233 682)

This paper presented at the April 1983 conference of the International Studies Association in Mexico City considers the potential utility of computer conferencing for the Third World. A brief description is provided of a computer conferencing system, the Electronic Information Exchange System (EIES), which is based at the New Jersey (USA) Institute of Technology. International discussions on telecommunications and some of the activities of multinational organizations which affect the extension of technology to developing nations are noted, as well as technical constraints on the extension of telecommunications technology. Applications of computer conferencing to education, employment, and information transfer are described, and the social consequences of the introduction of such a program are considered. General guidelines for the future implementation of computer conferencing are also given. A 26-item bibliography is provided. Available from EDRS in microfiche for 97¢ or in paper copy for $2.15 ■

Barbara B. Minor, Publications Coordinator, ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, New York 13210 USA.

Ithiel de Sola Pool

We at the Clearinghouse on Development Communication were profoundly sorry to learn of the death of Ithiel de Sola Pool on March 11, 1984. He was a pioneering researcher in the use of quantitative measures in communications theory and research. Widely published, widely read, and widely admired, Dr. Pool will be missed by all who know and respect his work.

—H.F.R.

Radio Training: Who For What?

by Michael Laflin

While some people would argue that good radio producers are born and not made, there *are* nevertheless skills in radio production that can be identified and for which training programs can be developed. This article addresses recruitment of radio production workers in developing countries, and discusses courses and curriculum appropriate for trainees who will be working in educational radio.

It is important to realize that, while general principles of recruitment apply, radio in many developing countries has a comparatively limited pool from which to draw recruits. Highly educated and widely read applicants tend to be few in number. Many radio stations are government organizations and can pay only limited salaries, so that the best communicators join private agencies. Available training may be associated with a project, in which case one has to recruit large numbers of people very quickly, and train them in a limited time. All these factors may militate against finding and training the best people. But when an organization exists and trained people are needed, training is not only possible, it is imperative.

Whom to Select for Training

The Institute for International Research is providing technical assistance to the Government of Liberia and the United States Agency for International Development to establish a network of five radio stations in Liberia. Many of my examples refer to this project, and also to the Educational Media Service in Kenya where I worked for several years.

The groups from which recruitment should be made often appear to be self-defined. The Liberian network, for example, is designed to serve education and information needs of local communities in their own languages. Therefore, linguistic criteria, a previous history of rural service, and educational qualifications of a particular level seemed to define the pool. However, in Liberia, these criteria proved to be too narrow. Too few female candidates applied, and the educational level cited suggested that salaries would be too small to attract more highly qualified candidates. In Kenya, the Educational Media Service, a system of distance teaching by radio, generally recruited from schools and teacher training colleges, on the assumption that educators should make educational programs. The programming was largely for primary schools, but most primary school teachers were felt to be underqualified to produce radio programs. Recruitment was therefore from among secondary teachers or teacher trainers, few of whom had had any primary school teaching experience. However, imaginative and effective programs often came from producers who were recruited from outside the education system.

In both cases, there were instances when the criteria ruled out people who were qualified, and failed to exclude those who were unqualified.

Whatever criteria are used to define the group from whom selection is to be made, the selection process itself is difficult. What indicators will be used to spot the talented and well-motivated producer? Creative and accurate use of language is evidently important. Furthermore, some objective tests of vocabulary correlate highly with general intelligence. But will the applicant exploit those skills? Will he or she persevere, show initiative, display a sense of humor? How can these qualities be assessed in a meeting as short and artificial as an interview? In addition to objective tests and interviews, two techniques provide useful indications of future performance. One is to send the applicant away with a tape recorder to record an interview and certain sound effects; the second is to find out what he or she reads and how he responds to books. Recording an interview and sound effects gives an indication of how the applicant reacts to people, to stress, to ideas. It gives an inkling of his or her initiative and determination, and his or her ability to structure a dialogue. Talking about books gives an insight into the candidate's capacity to discuss ideas, verbal dexterity, and personality. The choice of books, even if the interviewer has not read them, is revealing.

Such subjective selection methods assume that the interviewer knows the job requirements and is a sound judge of character. However, it can be argued that the job is more idiosyncratic than most. There is no stereotypical radio producer. Finally, even if objective tests are applied, they are based on assumptions, and nobody has proved that these assumptions select potential radio producers any better than the judgement of an experienced radio professional.

One further factor complicates the selection of radio producers. When a broadcasting organization is part of a government service, it generally operates under civil service rules. Does one therefore select the person who will operate well in the civil service milieu, or the person who may chafe against the regulations but produce good programs? The civil service reward-system is often such that the hardworking, meticulous, imaginative producer receives an extra production load as the only recognition of good performance. This not only encourages mediocrity, but often virtually guarantees it. There are thus factors to consider in recruitment quite separate from production capabilities.

What to Teach?

Most radio training courses go through the process of assessing job needs and developing responsive training objectives. I would argue, however, that in many cases the needs assessment is limited in its vision. A task analysis of radio production would reveal daily decisions and skills beyond what is provided by many courses. The producer of nonformal education programs should ideally be a researcher, planner, and manager; a writer, a sociologist; he or she must develop communities, curricula, and human resources; he or she must know something of child psychology, social psychology, translation from lingua franca to mother tongue; he or she must be an evaluator and statistician; a knowledge of development would help, as would technical knowledge of a field like agriculture or health; and all of this over and above a knowledge of studio operations. Can so much be included, and still be taught effectively? In what time period? To further complicate matters, we have to recognize that many of these skills are acquired through the on-going educational process, not specific job-centered training.

In the course that we are conducting for a group of 21 Liberians, which will last for 12 months and be followed by a further period of practical experience, heaviest emphasis is placed on a module called "Broadcasting Arts." This covers virtually everything that takes place in the control room: direction, editing, use of music and sound effects, and operation of equipment. It also includes skills such as interviewing, hosting discussions, microphone placement, and is little different from a conventional radio production course. Considerable time has also been spent on writing skills, from both a creative and a grammatical standpoint. Participants are learning the function of many program formats, and how to create them.

What is less usual, possibly because most courses last only a few months rather than for a year, is the emphasis placed on the educational and social context of broadcasting. We would argue that in order to respond to the educational needs of a society in terms that it understands and can make use of, the producer must first understand the society he or she serves.

An understanding of the social context of radio for development requires social survey skills, an understanding of community organization and of development processes, a knowledge of the organizations that radio will serve and of other communications systems, and the rudiments of social psychology. Whether one regards communications for development as a technical process of diffusion of knowledge, evangelism, or government propaganda, the radio producer must know the limits of his or her credibility and how to stay within those limits. Pro-

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(**Laflin** continued from page 6)
ducers must know how to analyze the society in which they operate, and the individuals who constitute it.

To produce educational programs requires skills in planning, research, and evaluation; and a knowledge of educational psychology. Since the Liberian Rural Communications Network (LRCN) will produce printed support materials, producers are also being taught audiovisual techniques.

LRCN rural stations will have the services of a group of outreach personnel at each station. They will function as links between the stations, other government services, and the communities, and will provide feedback to producers.

Management Courses Important

Every LRCN professional, whether a producer, administrator, researcher, or community fieldworker is taking a course in management. There are several reasons: first, each person has to manage affairs that involve several people, and one cannot assume that anyone instinctively possesses all necessary skills to do so; second, most LRCN personnel were formerly in positions where they may not have been exposed to the urgency of meeting production deadlines; third, we believe that an understanding of the functions and problems of management promotes a more positive relationship between managers and subordinates. In a new institution, where procedures are being developed and new problems arise daily, an atmosphere of cooperation is essential.

It is, perhaps, impossible to teach so much, even in a year, to people with no prior knowledge of broadcasting. No assumptions are being made that the practice of radio is a mystery that is completely solved in a fixed time, even if a person's status formally changes from trainee to producer when a period of time has elapsed or the last page of the curriculum completed. One never stops learning, least of all in radio production. To suggest one 'knows radio production' signifies a mental rigidity that is anathema to good radio, and is perhaps the flaw to which radio trainers are most prone.

The question of evaluating the progress of trainees is too large to include in this short article. Because the process of assessment is in many ways a fluid and subjective one, rigidity on the part of those doing the evaluation may be a problem. We are experimenting with systems of self-assessment on the grounds that more is likely to be learned by trainees from assessing their own progress than from external evaluations. Even the process of identifying appropriate criteria for judgements of progress is illuminating to trainees. Group work and group evaluation is also being used. One reality of evaluating training in the developing world is the economic cost of failure; few failures can be afforded by organizations with limited resources, so that passing and failing ceases to be an issue once the totally unsuitable candidates have been weeded out. The onus becomes that of making evaluation a useful learning process in itself, and of modifying and supplementing the training in the light of an evaluation of the program. Hence, evaluation focuses as much on the trainer as the trainee.

A weakness of project-related training is that it ends with the project. Institutions, on the other hand, are intended to endure. Consequently, part of the curriculum in Liberia is devoted to preparing trainees to staff a continuing Training Department with the LRCN.

I have enumerated the major elements of the course because I believe that training radio producers is too often seen in purely technical terms. Radio producers serve human beings in social and educational ways. Educational producers trained only in instructional systems design and to operate a studio have been shown only part of the whole process.

Any reader interested in further details of the course, for which a manual is being prepared and will be revised during 1984, should write to: Michael Laflin, Institute for International Research, 6715 Whittier Avenue, McLean, Virginia 22101, USA. Equally, I would like to hear from other organizations involved in training for radio, to exchange views, experience, and materials. ■

Michael Laflin has worked in radio and television in Kenya, and is currently with the Institute for International Research, under an AID contract to help the Government of Liberia to develop a network of rural radio stations.

McLuhan Prize Awarded

Luis Ramiro Beltran, Bolivian-born journalist and communication scholar, has won the first $50,000 McLuhan Teleglobe Canada award, the Canadian Commission for Unesco has announced.

The award was set up last year in honor of the late University of Toronto philosopher Marshall McLuhan, author of *Understanding The Media* and other works.

Its purpose is to encourage exceptional contributions to better understand the influence of communications media and technology on society in general, and on its cultural, artistic and scientific activities.

Beltran, who lives in Bogotá, has written extensively on communication research and techniques for rural development in Latin America.

Editor's Note: Dr. Beltran is a member of *DCR's* Editorial Advisory Board.

Reprinted from the International Council for Adult Education Newsletter, *December 1983.*

Good Things from Unesco

Reviewed by Judy Brace

In case some of our readers are not familiar with the Unesco series, *The Economics of New Educational Media,* there are now three volumes available. The first volume, published in 1977, deals with cost analysis, and contains such things as standard tables for cost measurement in media systems, institutions and experts in the field, a bibliography on instructional media, and several case studies. The second volume, published in 1980, goes into "results and problems" of determining whether media are cost effective, and for the first time introduces the concept of communication technology in other than formal educational settings. Here, too, are case studies, and project abstracts.

The newest volume, number three, published in 1982, gives a comprehensive overview of the issues involved in planning the use of educational media. Beginning with the "fundamental question" of whether technology increases the cost-effectiveness of education, various chapters cover twentieth century concepts, financial and institutional constraints in education systems, measurement methodologies, technology's effects, and a very nice summary chapter on the future of technology in education. The bibliography is particularly good.

These publications are available from Unesco booksellers worldwide, or from the Division of Methods, Materials and Techniques, Unesco, 7 place de Fontenoy, 75700 Paris, France.

Another Unesco series that our readers should know about is "Communication and Society." These monographs now number 13 (11 in English, 2 in French), and are grouped around themes such as historical development, communication indicators, and socio-economic aspects of national systems. Under this latter rubric, three publications review radio broadcasting in Austria, Venezuela, and Czechoslovakia. Number 13, *Traditional Forms of Communication and the Mass Media in India,* provides a comprehensive look at the variety of folk media available to carry development messages in India. India has institutionalized folk media in the Song and Drama Division of the Ministry of Information and Broadcasting and in the Department of Traditional Media in the Indian Institute of Mass Communications, and many seminars and workshops have been held on the subject. The purpose of this monograph is to develop the relationship between folk and mass media, to look at cases where they have been integrated, and to move this integration forward.

For information concerning the titles that

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A Communicator's Checklist

1 *Communication Economics and Development*, edited by Meheroo Jussawalla and D.M. Lamberton (Elmsford, New York, Pergamon Policy Studies, Pergamon Press, 1982), 345 pp.

Is it possible to link communications, development, politics, planning, and economics in a meaningful way so that consumers of the products of these linkages can decide which ones have potential for them? The East-West Communications Institute has a consistent and persistent history of studying the role of communication in the development process. Their ambitious endeavors in this instance resulted in an edited collection of presentations from a 1980 workshop on the economics of communication. This mixture of conceptual and practical analyses reflects the work of an impressive group of workshop contributors. Whether the results of their efforts impress the reader of this edition depends in part upon the readers' perspective and expectations. Those searching for impressive and persuasive evidence of the impact of economic analysis on development communication planning will likely be disappointed. Those seeking considered insight into the complexities of policy planning, telecommunications, politics, and economics will become much better informed. Add to this a concern for practical application of these concepts and processes in developing countries, particularly in rural development, and you have a fair description of the focus of this collection.

Workshop participants representing the fields of economics, information science, communication studies, and development were requested by the Institute to relate their areas of interest and expertise to concepts, techniques and problems represented in other areas. This is obviously no simple assignment, particularly when our requirements for clarity, simplicity, and universal truth are added to the evaluative criteria. What we find is a substantive, relatively academic integration of communications and economics. The case studies and analyses of case studies provide valuable insights into the formal and more often informal applications of economic principles and analytical procedures in communication planning. The considerable expanse between the theory and practice perspective is represented by chapters devoted to descriptions of predictive models, constraints on development, and concerns about the practicality of studying and eventually describing the relationships between communication and economics.

Although you would be hard pressed to state that there is something for everybody in this collection, theory builders, evaluators, planners, funders, and researchers from many fields can likely find relevant chapters and ideas. For example, John Middleton, George Beal, and Melina Pugne's chapter analyzing the reported use of economic concepts in communication planning supports a strong personal, but thus far empirically unsupported, bias towards cost-effectiveness methods rather than the strongly advocated (by economists) cost-benefit approach. Whether current practice by six agencies in five countries constitutes sufficient support for what should be done is still debatable . . . Another chapter by Heather Hudson on the generation of a model for predicting development benefits from telecommunications investment provides useful guidance for planners, evaluators, and researchers, particularly those interested in rural development and communications planning.

It will be interesting to see whether this publication is selected to serve as a textbook in college courses. The considerable range of perspectives and fields represented, while making it unique and useful, will also present a challenge for professors. Perhaps the generally cosmopolitan and integrative posture of most development communications professionals will make the selection decision an easy one. Or they may choose to use it as a personal reference text recommending specific chapters to selected colleagues and students. Either way, it will likely be judged useful and substantive. ■

Reviewed by Philip L. Doughty, an Associate Professor in the Graduate School of Education at Syracuse University in the area of Instructional Design, Development, and Evaluation.

Available from Pergamon Press, Inc., Maxwell House, Fairview Park, Elmsford, NY 10523, USA, for US$30.00, hardcover only.

2 *Telecommunications and Economic Development*, by Robert J. Saunders, Jeremy J. Warford, and Bjorn Wellenius (Baltimore, MD, The Johns Hopkins University Press, 1983), 395 pp.

3 *Telecommunications for Development. Synthesis Report.* (Geneva, International Telecommunications Union, 1984), 94 pp.

The debates which have taken place over calls for a New World Information Order (NWIO), at least to the degree that they have attracted significant public attention, have tended to center around a few highly controversial topics on the international agenda. The developed and developing countries have confronted each other over questions of national sovereignty and the free flow of information, cultural autonomy and cultural dependence, news management and freedom of the press. On these and related issues, the rhetoric has been heated and abundant, and the competing claims of the participants have been set out in such a way that, for the immediate future at any rate, there appears little possibility of reconciliation or meaningful compromise. Yet these admittedly contentious and highly politicized issues do not define the terms of the debate in themselves. There are other, equally important and perhaps more basic, issues involved which may show a better prospect for cooperation and substantive progress.

At bottom, the NWIO phenomenon is another aspect of the North/South cleavage between the rich and poor nations of the earth; which is to say that the discussion is fundamentally about disparity, in this case disparity in information and communications resources. As the world moves further and faster into the "information age," the nations of the Third World, lacking infrastructures, expertise and funds, see themselves being left behind while the developed nations reap the increasing bounties of the new information and communication technologies. They see the creation of yet a new kind of poverty, a poverty of information, which, taken with the extremes of material poverty they already face, portends a grim future. The NWIO debates have tended to center around the more obvious *results* of the global imbalance in communications resources. The deeper problem for the Third World, like so many of the others they face, is one of development, of building the basic communication infrastructures which will allow them to begin to benefit from the capacities of the new technologies.

Cast in this light, many of the difficulties surrounding NWIO present a rather different face and need not provoke such inflexible responses. Indeed, the creation of basic communications infrastructures as a tool in development in the Third World is something which the developed countries have pledged themselves to assist in principle and, to some degree, have already begun in substance.

Encouraging as such promises may be, translating them into action is another matter. Daily reality in the Third World is often grim and always complex. The developing countries are beset by a host of problems—unemployment on a mass scale, inadequate health and educational facilities, poor transportation, burgeoning urban centers, to

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name but a few—which make insistent demands on the limited resources available to deal with them. In the face of such immediate demands, which touch directly on the day-to-day condition of their peoples, these countries find it difficult to justify allocation of their meager resources to investments in telecommunications systems. There may be wide agreement that such investments will be beneficial in promoting overall development, but how to measure this tangibly and directly is difficult at best.

The benefits of an expanded telephone system are not apparent in the way that building a new public health clinic or a new school is. The paucity of research materials on communications in the development process makes it difficult for planners, economists and politicians to make decisions, to gauge priorities. Thus, though there may be a certain level of intuitive agreement on the importance of communications in terms of Third World development, the degree of that importance, the nature of the contribution to the whole, is difficult to judge.

Two new publications—one from the World Bank and the other prepared by the ITU with help from the Organization for Economic Cooperation and Development (OECD)—make a timely contribution to this discussion. Both are devoted to the role of telecommunications—largely telephone systems—in economic development. Each offers a valuable review of existing research in the field—the first time that this material has been gathered together in such compact, generally usable forms—and attempts to give to the issues involved the sort of perspective that has often been lacking. The Bank study is more in the nature of an overall review and does not make any firm recommendations for action. The ITU/OECD report, on the other hand, proposes the creation of a new global system called "GLODOM" to meet the needs of telecommunications in the developing world.

Taken together and on their individual merits, these two studies make a significant contribution to the discussion of a problem that is going to loom large in the years ahead. It is already clear that full participation in the life of the information age requires access to the technologies of communication beginning at the basic levels. That an imbalance between the rich and the poor nations exists in the availability of these resources is beyond question. As this disparity comes more and more to be felt, there will be a growing and insistent demand that it be redressed. Among other things, this will mean that we are going to have to try to understand more clearly than we do now the benefits, costs, complexities and risks involved in building basic communications infrastructures in the Third World. Both of these studies will enhance our understanding and provide provocative indications of the directions in which we ought to be heading. While each is careful to avoid touting panaceas or quick fixes, both (one guardedly, the other openly) offer the prospect of a world information order that is not static, but capable of adaptation, adjustment and more equitable application through cooperative effort.

Three Major Viewpoints

In the World Bank's study, *Telecommunications and Economic Development*, the authors identify three major viewpoints. The first argues that "the expansion of telecommunications services does not deserve priority in resource allocation, partly because it has too little measurable economic effect and partly because in some countries rapid two-way communication among the population could occasionally facilitate political instability." The underlying assumption in this view is that "this service is used for the most part for economically and socially worthless purposes."

The second, less restrictive opinion is "that at least the demonstrated market demand for telecommunications should be met and that new technical applications should be provided when they are the most cost-effective way to meet registered demand and to provide minimum telephone access to rural areas." This, in general, is the position which has been taken by the ITU Consultative Committee on Telephone and Telegraph (CCITT). The third viewpoint is a good deal more activist, more optimistic about the potential of new technologies, and "promotes rapidly advancing telecommunications technology as a prime means to achieve a wide range of social and economic goals in numerous socially oriented sectors, including the delivery of education and health services."

The importance of determining which of these views is correct is something that, as the book notes, "can scarcely be exaggerated." On the one hand, if a sound telecommunications infrastructure is in fact "essential for rapid and efficient development," its neglect may hinder development in other areas. If, on the other hand, existing levels of and expansion of such systems are more or less appropriate, "then massive investment in the premature expansion of a major infrastructure system would be not only a misdirection of resources, but would create a serious burden of unnecessary administration, training, and maintenance." Having acknowledged as much, however, the authors decline to attempt to provide any specific answers because of the "paucity of sound analytical material and relevant empirical data on which to base policy decisions about investment in telecommunications."

What this book does provide is a comprehensive review of the materials available in this field. It is divided into six sections. The first is introductory, designed to lay necessary groundwork and to provide perspective. The second is devoted to macroeconomic analysis of benefits following "highly aggregative approaches," which the authors conclude are descriptively useful, but of little assistance in decision-making. Part III addresses microeconomic approaches to benefit analysis, concluding that these are "in almost all instances unsatisfactory" and that it is usually necessary to "make decisions on qualitative grounds." The fourth section examines various usage and user patterns in telecommunications drawn from surveys taken throughout the world. The fifth part discusses tariffs and investment decision-making, while the concluding section briefly discusses the "potential for some fundamental organizational change." The book contains three appendices and there are numerous illustrative tables and charts throughout.

In setting out their aims, the authors are very modest, saying that they chiefly want to provide "policymakers with food for thought on ways to use economic analysis to improve resource allocation on policies for sector organization, management and tariffs." They have certainly succeeded in this, and they have done a good deal more. The thorough, careful and judicious review of research which they provide is a first rate, major compilation. In providing this, the authors have done a real service and have produced a reference book for all who have a serious interest in communications and development.

Telecommunications has never been high on the Bank's list of development assistance priorities. As the book says, the policy has been "to limit its involvement in the telecommunications sector to that of lender of last resort." Since 1960, the Bank has approved $2.6 billion in telecommunications loans and credits in 42 countries, which amounts to less than three percent of its lending in that period. Yet even though the Bank's role has been thus limited as a matter of policy, it is nonetheless "the principal multilateral source of finance for telecommunications in developing countries," a role that it will likely continue to play in the future. It remains to be seen whether this study signals any shift in priorities by the World Bank towards a more active role in promoting telecommunications development. Any such changes will undoubtedly be gradual and, like the approach of this book, cautious.

Joint ITU-OECD Report

Telecommunications for Development is a report prepared jointly by the ITU and the OECD. In subject and scope it is similar to the World Bank's study, but its approach is quite different. The purpose of this document is, in the authors' words, "to pave the way for development of inexpensive and reliable telecommunications services in the countries which need them most of all, namely the developing countries, and in particular their

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have appeared in this series readers may contact the Division of Free Flow of Information and Communication Policies, Unesco, 7 place de Fontenoy, 75700 Paris, France.

Readers who are concerned with information management, or with communication research, may wish to obtain a copy from Unesco of their recently revised *Thesaurus of Mass Communication*. A thesaurus is intended to be an aid to bibliographic storage and retrieval, used as widely as possible so as to encourage consistent information management throughout data networks by means of a list of terms to be applied uniformly to subject areas. To compile this revision on mass communication, a number of international centers of communication study collaborated, "establishing a basis for exchanges of information between countries and regions," that "will allow national and international networks (see below) to operate in a fully satisfactory, consistent manner." The *Thesaurus* is arranged in three parts, each of them trilingual (English, French, and Spanish). The first is an alphabetical list of descriptors. These are the terms assigned to indexed documents with which databases can be searched and documents retrieved. The second part is the classification system, developed by Unesco, of the groups of descriptors. By assigning a document the classification number to which its subject area belongs, the document can be shelved and retrieved in an organized fashion. The third part, the "permuted descriptors index" simply lists the various subject areas under which a single term/descriptor might appear. "Analysis," for example, carries 25 modifiers under which it can be found, such as "comparative analysis," "economic analysis," "systems analysis."

Despite the fact that there are too few "scope notes" to define the scope of the descriptors, and an uneven selection of terms chosen for inclusion ("networks" is not included), this is a major contribution to communications information management.

The *Thesaurus* is available through Unesco booksellers, or from the Communication Documentation Center, Division of Free Flow of Information, Unesco, 7 place de Fontenoy, 75700 Paris, France. ■

Reader Survey Update

To those readers who have returned Reader Survey Questionnaires, mailed out in *DCR* 44, our sincere thanks. If you have not sent yours in, it is not too late! We want to hear from you.

Early returns show readers' professional interest as follows (some people checked several): communication, 60%; education, 28%, agriculture, 25%; health, 21%; nutrition, 16%; population, 10%. A full tabulation of results will be published later.

(**Radio Classroom** continued from page 4)

6. The classroom teacher demonstrates the task to be performed by: • writing on the blackboard • demonstrating on a worksheet.	The radio class must demonstrate (model) what it requires the children to do through clear directions and dialogue.
7. The classroom teacher works to a set curriculum that has been devised to cover the whole year. From this, the teacher creates discrete lessons plans for each day's work.	The radio lessons must work to a curriculum that has been developed in advance. From this, there must be lesson plans for each broadcast.
8. The good teacher follows an efficient teaching strategy: • introduce the topic • demonstrate • allow practice • give reinforcement of right answers • summarize.	A good radio lesson must follow the same format.
9. A classroom lesson is paced so that children do not get tired. Periods of relaxation are provided throughout the school day.	The radio lesson must be similarly paced, giving children time for breaks in which they have brief periods of physical activity.
10. The classroom teacher writes on the blackboard the day, the date, and the subject being taught.	The radio must provide the same information, where possible. Sometimes it is not wise to include the day and the date because broadcast schedules have a way of changing without notice! However, children should be clearly told what subject is being taught at any part of the program.
11. The teacher develops a series of commands that the children learn to follow. The teacher trains the students to respond to certain commands automatically—in order to save time and avoid confusion.	The radio class must develop a series of commands, accompanied by clear sound cues that will assist the children to follow the lesson.
12. Classroom students get to know their teacher as a person.	Radio students must be given the same opportunity to "know" their teachers even if they never see them. This can be accomplished by talking "to" the children, rather than "at" them, and by allowing the teachers to model the lesson, and by involving teachers in songs and games rather than using commercial recordings of songs and games.
13. The teacher can give individual attention to children having difficulties.	The radio class must make allowance for children who cannot keep up with the radio class. This is best done by inviting such children to stay after the lesson to go through it with the helper in the classroom.

Twenty Hints for Making the Radio into a Classroom

1. Provide an opening theme song that radio teachers and children sing together. This should be an original song created just for the program and about the program. (This song becomes the lesson "entry"—rather than walking into the classroom.)
2. Greet the children. If there is more than one radio teacher, they should greet one another and greet the children. If a number of teachers will be used throughout a long program, they can all be introduced at the beginning of the program and give a collective greeting.
   If there is doubt about the time of day the program will be broadcast, use a general greeting, rather than Good Morning or Good Evening.

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3. Use some sort of involvement exercise *early* in the program, so that the attention of the students is caught at the outset. Do not spend a lot of time giving instructions to the off-air teacher or assistant. Do that within the body of the program.
4. Use theme music to introduce each portion of the lesson, so children can anticipate what is coming and adjust their "mind-set" to it.
5. Use sound effects (gong, whistle, etc.) to alert children to often-repeated instructions, such as "Stand Up; Sit Down;" "Turn over your worksheets;" "Pick up your pencils."
6. Announce the various segments of the lesson clearly. Do not rely on the music cue alone and do not leave the children guessing about what they're supposed to be doing. Err on the side of too much instruction, rather than too little.
7. Always demonstrate (model) what the children are supposed to do.
8. Have *one* teacher in charge of each instructional segment. Use an assistant if necessary, but make it clear to the children that there is *one* voice giving the actual instruction.
9. Make all instructions clear and simple to follow. Use the same instructions every time the same behavior is required. Where the children are required to perform an action, try to make the action verb the last word in the sentence. For example: "Children, write."
10. Where there is a sequence of instructions to be followed, establish a pattern and stick to it.
    Example: "Children, look at the blackboard as your teacher writes the word "soap."
    PAUSE - 10 seconds
    Children, read the word with me — "soap."
    Children, look at your worksheets.
    Put your finger on the square with the dog.
    You are going to write the word soap on the line in that square.
    Children, write."
11. Where possible, have worksheets put out of the way when they're not in use. If the children do not have desks, they can be told to turn the worksheets face down—and the instruction should be followed by a sound cue. Worksheets are very distracting if the children have them visible in front of them all the time.
12. Keep the pace *up* within a teaching segment. Allowing too much time also allows young minds to wander. Observe the classroom carefully to determine the length of the pauses needed for student responses.
13. Don't be afraid to tell the children you're going to have drill practise. Drill can be an important part of radio learning. If the children know that's what it is, they will enter into it more willingly than if you don't tell them, and try to motivate them to drill in a round about way.
14. Create a working atmosphere during a working segment. This means order and *quiet*.
15. Summarize the lesson briefly when it is over and tell the students it is over.
16. Establish a bank of short relaxation segments—songs and games—that can be performed by children in cramped quarters. Frequently the children cannot get out of their desks or move around.
    These relaxation segments do not need to be more than a minute or so long. Balance learning segments with relaxation segments.
17. If you are teaching more than one subject within the radio lesson, establish different formats for the various subjects. This makes it easier for the children to identify the subject they're working on, and it also provides the variety that is necessary to maintain their interest.
18. Make sure that the children are taught to listen. Do not assume that they know how to listen. If they are not accustomed to radio and they are not accustomed to having stories told to them, it is likely they will not know how to listen attentively for a period of time.
    An important part of the success of any radio school depends on how well it trains its students to listen.
19. Make sure that the personality of the radio teacher is allowed to come through, but without swamping the program or taking up too much program time. Simple greetings, modeling, and joining the children in songs and games are first steps that can be taken in this regard. Writers should attend studio recording sessions so that they can gain an understanding of the character of the teachers they're writing for and allow for this in their scripts.
20. End each day's lesson in a standard fashion—perhaps with the theme song again—to indicate to the children that the day's lesson is over. ■

Esta de Fossard is an international consultant in Radio Education. She is currently based at the Academy for Educational Development.

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new listeners require different writing and production techniques than subject matter prepared for experienced listeners.

Captive vs. noncaptive. A captive, in-school audience ready to listen to radio instruction requires a different use of the medium than a noncaptive audience. With the noncaptive audience, the educational broadcaster has to compete perhaps with entertaining choices from other media as well as popular activities and pastimes of the community. The techniques used to capture and hold an audience, as well as instruct it, are quite different from those of in-school broadcasts. This does not mean instructional programs for the captive school audience should be dull or colorless, but more attention can be given to motivation and instruction rather than to gaining attention.

Instructional content. The most complex knowledge and analysis required in planning instructional radio concerns the relationship of the content to the medium. Shaping listeners' attitudes toward the outstanding events in their history requires a different use of the medium than teaching mathematical skills, for example. Teaching a language by radio is different from teaching an appreciation of music by radio. The subject matter and objectives influence the way in which radio is used.

A recognition of the constraints—what radio cannot do effectively—is also important. Although these are probably not as severe as we often think, it is important to recognize them and to plan other strategies to compensate for any instructional areas that cannot be covered by the radio.

Environment

It is a commonplace that environmental factors are important in planning educational programs. The effective introduction of radio into the educational experience requires still another look at the environment in which the learners gain their experience.

Physical. The physical environment may present a number of constraints on the learning experience and the use of radio. The most obvious is the effect of climate and terrain on the quality of radio reception. The answers to questions about reception are generally rather straightforward—either reception is good or it isn't. On-site observation, rather than second-hand reports, is the surest method of getting an adequate assessment of reception, however.

The physical environment as it affects learners and learners' needs is more complex. Observation and interpretation are required in order to answer questions related to the classroom: Can the children hear the radio during a rain on the tin roof? Can they hear over traffic noise in the city? Equally important environmental questions relate to the

(continued on page 12)

Nonformal Education Conference

Nonformal Education Study Conference at Michigan State University, June 4-22, 1984. The Sixth Annual Institute for Studies in Nonformal Education has been announced. It will be held in East Lansing, Michigan. For information contact Ted Ward, 518 Erickson Hall, MSU, East Lansing, MI 48824-1034, USA.

The Idea of Visual Literacy

Visual literacy—an aspect of literacy often ignored until Wiseman and others began to draw attention to it—is often an important first step towards gaining other literacy skills. By "visual literacy" is meant the individual's capacity to extract information from a photo or illustration. The famous expression: "One picture is worth a thousand words" is only true if people have the perceptual abilities to absorb a thousand words' worth of knowledge from the picture.

For most Westerners the memory of learning visual perception is lost in the obscurity of childhood, and their daily absorption of visual knowledge continues to be largely unconscious. Few are aware, for instance, that their capacity to understand many subjects comes mainly from constant exposure to television, films, and book or magazine pictures.

In the homesteads and villages of Africa there are virtually no pictures to look at. The research that has been done in East Africa shows that in rural areas, where the bulk of the population lives, visual literacy levels are low. Due to lack of exposure to visuals and any form of education connected with interpreting them, people have difficulty in understanding pictures, and may even fail to realize that there is anything to understand.

—**George McBean.** *UNICEF News,* **Issue 114.**

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Readers are invited to submit typed manuscripts of no more than 1000 words, and to send in photographs.

(**Imhoof** continued from page 11)

learner's ability to make use of instruction: How far do children have to walk to school? Are children warm and comfortable?

The physical environment is easily studied through experience in the target area, but this knowledge plays a significant role in designing effective learning materials for specific learners.

Social. Social activities employed in broadcasts which are contrary to the learners' experience will at best seem strange and at worst be incomprehensible. Study and analysis of the social environment is also critical if instructional radio is to be relevant in a particular setting.

One complex social dimension is the relationships between groups of people in the culture. What is the nature of male-female relations, adult-child, teacher-student, and so on? What is "acceptable" behavior by any group? For example, what is school behavior?

Another social area is the role of radio itself in the social setting. How is radio normally received? What are the attitudes toward radio? If it is seen only as entertainment, for example, it will be the task of the educational radio project to change this perception.

Political. There are a number of political concerns in any educational plan and these are always sensitive issues. Who normally receives instruction in a society? Who makes decisions about the project? Does the project favor one group over another in a way that is contrary to acceptable political practice?

Ignoring political realities can lead to the failure of educational projects. Even worse, it may endanger some of the very people the project attempts to train or educate.

Curriculum

Curriculum development in an instructional radio project adds still more complexity to the task of the planner.

Origin. The most important information required by the educational radio planner is whether a new curriculum is to be developed or whether the existing curriculum is to be adapted for radio. In either case a number of questions have to be answered: Where does the curriculum come from? What is its philosophical or theoretical framework? What does it cover? How is it approved? Even if the curriculum has already been written and tested using another medium, these issues are significant in translating the conventional curriculum into a radio curriculum.

Medium. Another major analysis task is relating the curriculum to the medium. It is expected that the educational radio team will have as a major strength the ability to analyze the curriculum and decide how to teach it by radio. Some effects of the medium are obvious. For instance it is probably easier to teach general science by radio through stories, dramas, games, and so on, than it is to teach

"Can the children hear the radio during a rain on the tin roof? Can they hear over the traffic in the city?"

physics, since physical principles can perhaps best be understood with a visual component in the instruction. This doesn't mean radio cannot be used to teach physics, but the subject matter will require a different use of radio and supporting visual materials.

Research and Evaluation

The project planning team must understand the research aims and evaluation methods in instructional radio projects.

Design. Sometimes an outside evaluation specialist or team is employed, but in many instructional radio projects the planning team itself is responsible for implementing the research design, carrying out the development activities, gathering data, and evaluating the project.

The team needs to be able to answer authoritatively questions like: What do we want to prove? How much and what kind of data do we need? How do we know if we've succeeded? Who will evaluate?

Testing. One frequent method of judging the success of an instructional program is testing student achievement. Subject-matter testing is yet another technical area of expertise needed by the project team. What achievement tests can be used? How can they be developed (if they don't exist)? What sample of students should be tested? Testing is a highly specialized field. It is too much to expect the radio planning team to have this skill, but the team should at least have an understanding of the relation of instruction to learner achievement.

Conclusion

The tasks involved in creating a successful instructional radio project are numerous and complicated. Unfortunately, they are often assigned to too few people with too little time for planning and thoughtful analysis of the various components that make up a project. Education authorities considering the use of radio should realize that quality education is a result of more than the choice of a medium.

We don't read much about instructional radio projects that fail. It is not likely that failures are caused by the limitations of the radio medium. Rather, they are the result of inadequate planning for the complex interrelations in radio education. Money, time, and effort spent on the best information available during the planning stages gives the best assurance that education will improve. ■

Maurice Imhoof is Senior Project Director, Academy for Educational Development, and Project Director for the AID Radio Language Arts Project in Kenya.

(Communicator's Checklist from pg. 9)
rural areas." It responds to questions posed in the World Bank study, and begins with the assumption that "good communications are at the same time a cause, a consequence and a manifestation of development." While acknowledging that many of the benefits of investment in telecommunications—again, telephone systems—are indirect and not always apparent, the authors conclude that those benefits are real, substantial, crucial to development and obtainable in the short term. The goal they set for themselves is to seek to identify and measure these benefits to demonstrate the intimate relationship which they believe exists between telecommunications development and economic and social development in general.

While acknowledging that the subject is "understudied" and that there is a "near complete absence of a general theory on the contribution of telecommunications to socio-economic development," the report points out that there is a literature, chiefly in the form of case studies, which shows "some of the indirect benefits of investment in telecommunications." The authors then proceed to review that literature, microeconomic and macroeconomic, and to apply the findings to the problems of telecommunications development. Their conclusion from this examination of the evidence is definite and clearcut:

"The studies carried out within the framework of the ITU-OECD project have clearly demonstrated that investments in telecommunications and notably in rural telecommunications, are extremely profitable from an economic and social point of view, and contribute in a subtle but important way to improving both the quality of life in the rural areas and the overall efficiency of rural economies. Investments in telecommunications are one of the 'causes' of, or contributing factors to, 'development' just like investments in education, public health, roads or agricultural extension services, and the evidence accumulated in the course of the ITU-OECD project confirms the intuitive perception of a few planners and development experts about the importance of telecommunications in the development process."

For the authors of this report, the evidence is plain and the point is proved. Having said this, however, they turn to the complex problem of how the demonstrated need can be filled and telecommunications benefits brought to rural areas.

This can be done, the report says, and it can be done relatively inexpensively by using new communications technologies to build high quality networks that extend to even the most remote areas. What the report proposes is the creation a a system called "GLODOM," an acronym combining "global" and "domestic." The system would be based on four satellites providing global coverage and a network of highly efficient earth stations located in the participating countries. The satellites would be regionally directed and all of the countries participating would share in their ownership. This system, the report estimates, could be built for a total investment of $1.26 billion, thus bringing "telephone service to all the rural regions of the developing world, even the most remote, for an initial investment cost which is practically similar to that of telephone service in the industrialized countries."

In this brief paper, the ITU and the OECD have opened exciting prospects. It is compact, crisply written, makes skillful use of the available research and is thoroughly plausible if not completely convincing. This document carries the argument about the role of telecommunications in development well beyond the World Bank's position. Telecommunications do have a vital role to play in the development process, this report concludes, and GLODOM provides a way of building necessary infrastructures without stinting on investments in other sectors. It is a system, says the report, that "is a sound economic proposition and it will benefit first of all the people living in the rural areas of the developing world, who have been almost totally left out of the development process." ■

Telecommunications and Economic Development *is available from The Johns Hopkins University Press, Baltimore, MD 21218, USA, for US$32.50 hardcover, $14.95 paper cover.*

Telecommunications for Development *is available from the International Telecommunications Union, Place des Nations, CH-1211 Geneva 20, Switzerland, paper cover, for 45 Swiss francs.*

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Reviewed by John A. Swenson, formerly with the United States Information Agency, and currently working with Catholic Relief Services in Washington, D.C.

4 *Microcomputers in Development: A Manager's Guide,* by Marcus D. Ingle, Noel Berge, and Marcia Hamilton (Hartford, Connecticut, Kumarian Press, 1983), 174 pp.

There used to be a Catch-22 about microcomputers in developing country settings. From the first moment microcomputers were popularly introduced, pundits remarked that their application would be revolutionary, yet they also gave a thousand and one reasons why they couldn't be installed efficiently. Hindsight and experience has shown these skeptics to be premature. Most of the so-called inhibiting factors to successful installation and operation of microcomputers have been ingeniously overcome, proving once more that where there's a will, there's a way.

This exceedingly useful handbook, written by three recognized pioneers in introducing microcomputers in developing country settings, will persuade any doubters still around and give valuable new tips to old hands wanting to be more adventuresome in their applications.

Microcomputers in Development: A Manager's Guide is a thoughtful, practical guide, full of excellent and timely advice. Its merits go far beyond Third World applications, and the book is recommended to anyone contemplating adopting microcomputer technology in their work or home. It is written in clear, easily understood English that avoids jargon and computer doubletalk while plainly defining certain terms that anyone learning the technology must know if they're to understand the medium properly.

The only criticism I have is the choice and format of the charts inserted into the text. They serve no useful purpose that I can see. They are confusing and appear to be inserted because someone thought the book needed charts. They serve to complicate the message, rather than clarify.

Written from a manager's viewpoint, the book's underlying theme is the installation of micros "to get a particular task done efficiently and profitably." *Microcomputers in Development* gets *its* task done admirably by sticking to particulars rather than generalities. Unlike most other books on the subject which talk in global terms about philosophical impressions of what the technology can or should do, or what they've been told they do, this book speaks from hands-on experience and illustrates successful adoption. It is organized into five chapters: The Management Potential of User-Friendly Microcomputers; Hardware and Software: Keys to Maintaining Utility and Diversity; Choosing a Microcomputer for Use in Development Projects and Institutions; Installing, Using, and Maintaining Microcomputers in Development Project and Institutional Settings; and Representative Applications in Development Projects and Institutions. Perhaps the most useful information is provided in the Appendices, which include: How to Provide 110 Volts for Apple Operation, Survey of Microcomputers in Developing Countries, Major Manufacturers and Houses of Hardware and Software, Bibliography, and Glossary.

If one could obtain only one guide, this should be the one to select. ■

Available from Kumarian Press, 29 Bishop Road, W. Hartford, Connecticut 06119, USA, for US$12.75, paper cover.

Reviewed by Arlene Horowitz, Program Associate and in-house computer expert at the Clearinghouse.

(Galda continued from page 3)

grade, as well as beginning a national expansion of the mathematics programs and a set of radio programs for teaching language arts, which are being developed at the same time as the mathematics programs. The radio programs are being used this year in more than 500 schools all over Thailand. With World Bank funds, CET is purchasing about 50,000 radio receivers which will be distributed to most of Thailand's 30,000 primary schools in anticipation of further expansion.

Evaluations Favorable

Constant evaluation of the mathematics programs in Thailand has been carried out since 1981. Although this evaluation was done in a small number of schools (32 experimental and 32 control schools) in only two of Thailand's five geographical regions, these preliminary results have been very encouraging. In both first and second grade, in Bangkok as well as the Northeast, radio students have scored much higher on mathematics achievement tests than students in the corresponding control groups. In fact, the results were quite similar to those obtained in Nicaragua. As was also the case in Nicaragua, the difference between the radio group and the control group was much greater in rural areas than in urban areas. The radio students in the Northeast performed much better than the control students in the same region and almost as well as the control students in Bangkok. This result is exceptionally important, since the Thai Ministry of Education's first priority in primary education is the reduction of great regional inequities in the educational system.

There have been surprisingly few problems in adapting the RMP programs to the Thai schools. The chief problem has been to make the curriculum used in RMP programs completely compatible with the official curriculum in Thailand. Although the differences are not great, a large number of changes had to be made. The implications of these changes are usually minor. For example, in Thailand, addition of fractions is not introduced until third grade, whereas in the Nicaraguan lessons this topic was begun in the last half of second grade. The style of the programs in Thailand is quite similar to the original RMP programs, except, of course, that Thai music is used instead of Nicaraguan music, etc. At the outset, a number of Thai educators had listened to the Nicaraguan programs, and some of them had said that the approach used in Nicaragua would not work in Thailand, as Thai children are very shy and would not be comfortable responding to the radio teachers. Fortunately, these fears have proved groundless; if anything, Thai children respond with even greater enthusiasm.

An example of the second level of adaptation, teaching mathematics to primary school age children in a nonformal education setting, can be found in the Dominican Republic. The RMP programs are being currently adapted as part of the AID-sponsored RADECO *(Radio Educativo Communitario)* project in Barahona, a small town in the southwest. RADECO was described in *Development Communication Report* (*DCR* #42, June 1983), so I will limit myself to only a few comments about the adaptation of RMP programs to RADECO.

The RMP programs have been designed for use by all kinds of teachers. In Nicaragua some of our teachers had no more than a primary school education, and little or no teacher training. These teachers are comparable to most of the RADECO monitors (called *radioauxiliares*) who generally have not had much more than a primary school education, although some have finished secondary school, and a few have advanced education. The main problems have been in *adapting* the programs to a very primitive physical environment. RADECO centers typically consist of only a thatched roof with a long bench (but no desks) for the students. The centers have only a very small blackboard. Although the RMP curriculum is different in a few respects from the official Dominican curriculum, we have been given freedom by the Dominican government to differ somewhat from the official curriculum because of the nonformal context in which RADECO is working. In 1983 RADECO broadcast a complete set of first grade programs to about 25 centers. Although evaluation results are not yet available, continuous monitoring of the programs indicates that the mathematics programs have been well accepted and that students are learning successfully from the programs. Planning for second grade has been completed and these programs will be produced in 1984.

At the third level of adaptation, using RMP programs for adult audiences, we have very little information. As mentioned above, the RMP programs attracted an adult audience in Nicaragua, but we did not distribute printed materials to this audience, and we did not have the resources to find out how adults were using the programs or whether they were really learning from them. The third and fourth grade radio programs were explicitly designed so that they could be used without teachers and require no printed materials. In theory, these programs could be adapted to an adult audience studying at home. The Guatemalan Ministry of Education has expressed interest in adapting these programs for adults as part of the Guatemalan literacy campaign. They have received the scripts for these programs, but it is uncertain whether anything has been done with them.

Fourth Level Working in Kenya

Finally we come to the fourth level, using methodology from the RMP programs for designing radio programs in other subject areas. An example of this type of application is the AID-sponsored Radio Language Arts Project in Kenya, which is successfully using radio to teach English as a second language in Kenyan primary schools. This project was modelled on the RMP, and there are many similarities in pedagogical approach and style of program between the two projects. In particular, the method of "feedforward," or incorporating formative evaluation results into future programs, developed by the RMP, is also being used in Kenya.

As we have seen in these pages, the work of the RMP has been adapted successfully in several ways. The advantages of adapting work from a previous project rather than starting an entirely new project are obvious: much lower development costs, no need for having a large staff of trained researchers, and a chance to solve problems much faster. However, in spite of these advantages of technology transfer there have been many problems in setting up such programs in other countries. Some of these are specific to the RMP, such as the fact that many developing countries are still emphasizing abstract "new math," and they perceive the RMP programs as archaic. Other problems reflect the decreasing emphasis on education in AID in the 1980s and the reluctance of AID Missions to undertake education projects designed centrally, rather than locally. Still other problems are quite general. Nationalism, for example, sometimes inhibits acceptance of work developed in another country, even if it is in a relatively culture-free subject like mathematics. The demonstrated successes of the RMP adaptations, however, make a strong case for putting radio programs of proven worth into new settings. ■

Klaus Galda, who was the director of the Radio Math Project in Nicaragua, is now consulting for Unesco in the Thai Fifth World Bank Education Project, and for the RADECO Project in the Dominican Republic.

Spanish Glossary Available

The Clearinghouse, through the generosity of the Organization of American States' Multinational Project of Educational Technology, has a limited number of copies of its *Glosario de Tecnología Educativa* available to our Spanish-speaking readers. The *Glosario* was developed to provide educators, technicians, students, and professionals with definitions of terms used in the field of educational technology, covering training, communications, instructional design, evaluation, media production, and systems theory.

While copies last, this attractive and useful publication, in Spanish only, may be requested from the Clearinghouse. ■

(**Nutrition** continued from page 16)

of some of the numerous problems which women face in dealing with the many dimensions of their existence. It showed that without in-depth social reform to support breastfeeding, all attempts at breastfeeding promotion will be attacking the symptoms, not the real cause of the problem.

An investigation into selected demographic, dietary, and health-related factors was conducted among pre-schoolers in the Central American mainland territories of Belize in the context of a nutrition status survey in 1979.

Several factors responsible for the prevalence of malnutrition and overall poor growth were cited, among which were: the decline in breastfeeding—a perennial problem, late introduction of solid foods, frequency of diarrhea, and too many children in the household.

In relation to the decline in breastfeeding and incorrect weaning practices, mass media was implicated as the chief culprit in luring mothers away from natural and culturally-specific feeding methods towards the use of expensive imported products. Bottle-feeding and the use of imported baby weaning foods and cereals offered these poor Belizean women the chance to give their babies what they thought was the best money could buy. When asked why they had abandoned breastfeeding, many claimed that they had insufficient milk, were too tired, or that the milk was too salty. Nurses had to be sensitive to the real reason for not breastfeeding, which was the powerful social pressure imposed by the commercial advertisements to which many were exposed through mass media.

Among the strategies for improvement suggested in the survey was the need for greater awareness among medical personnel of the profound influences exerted by the promotion of high-status imported foods on the food preferences of mothers. While the techniques employed by the "hard-sell" advertisements were in some cases repugnant, there was no denying that the method did lead to significant changes in attitude and behavior, as demonstrated by the mothers' overwhelming response to the ads. This finding presented a challenge to health workers to adopt approaches which were less traditional and conventional, and more stimulating in their efforts to protect the health of mothers and babies.

The same survey also showed that by making a recommended practice easy to implement using familiar cultural methods, the chances of its acceptance would be greatly increased. While it might have been difficult and expensive for a poor developing nation like Belize to simultaneously improve sanitation, water, and personal and domestic hygiene, it was found that the worst effects of diarrhea could be effectively lessened by employing community-based rehydration methods. Treatment with herbal teas is a well-established cultural practice in all ethnic groups surveyed, so it was recommended that mothers could be taught to add certain ingredients to herbal teas of known empirical value instead of replacing the tea by the oral rehydration solution. So the rehydration salts were added to the tea along with sugar and salt in the right proportions, and the tea fed to dehydrated babies. The nurses also suggested to mothers that they use milk instead of water when preparing the cassava starch gruel, thereby increasing its nutritional value. Instead of denigrating an ethnic food of great emotional significance, these wise nurses were able to effect measurable improvements. Nearly half of all mothers in Belize using cassava starch gruel now add milk.

Role of Mass Media

I have mentioned that mass media in Belize were implicated in the spread of a great deal of nutritional misinformation, chiefly inaccurate, misleading fallacies which contradicted the correct facts received from more reliable channels. This is one of the chief reasons for the "cold war" that has waged relentlessly for several years between nutritionists, on the one hand, and the media on the other.

In 1976, CFNI conducted an important meeting on "Nutrition and the Mass Media"—which I was very privileged to organize—which was a bold attempt to reduce the conflict and confrontation that had developed between the two groups.

Hazel Brown, who represents the Trinidad and Tobago Housewives Association, will tell you that this meeting was not the first time that these two opposing camps had come together. Her organization had in fact mounted a Breastfeeding Campaign in 1974 which showed that mass media could play a positive role in nutrition education efforts. In this six-week campaign, a local advertising agency and media professionals worked alongside medical and nutrition personnel in designing, developing, and implementing breastfeeding messages which were aired on radio and TV and published in national news media and in advertisements. CFNI's "Nutrition and the Mass Media" meeting offered further scope for strengthening this collaboration which had been established between mass media and nutrition professionals.

This meeting represented an important preparatory activity for the Jamaica Nutrition Education Program. The strong linkages established between mass media and nutrition personnel was the factor most responsible for the selection of an advertising/marketing approach as the chief component of the mass media strategy. The Program hired a commercial advertising agency to produce press advertisements, posters, radio spot announcements, radio dramas, bumper stickers, bus shelters, and billboards, using the same techniques used to sell consumer goods, with only slight modifications. Evaluation found the media produced to be the most outstanding aspect of the campaign and it was recommended that in the revised phase of the Program no new media need be produced.

Lessons Learned

It is clear that there is more to communication than mere information transmission. Information alone cannot make people change, but effective communication can produce/create the right climate for change to occur.

1. The nature of the message is an important determining factor in attitude and behavior change. Change will occur naturally and easily if the message is clearly conveyed, simply and directly expressed, and consistent with other messages being disseminated by other media, e.g. field workers. Change will also occur if there are no barriers to change--if the infrastructure is in place and if the necessary resources and facilities to support the change exist.
2. The message must fit the audience for which it is intended. Messages should be extensively pretested on a representative sample of the potential audience to determine if there are any lifestyle factors which could affect their acceptance or rejection. The messages must then be redeveloped on the basis of the "feedback" received.
3. The medium which is chosen as the vehicle for conveying the message must be appropriate, culturally relevant, familiar, and liked.

Numerous cases exist in the Caribbean of the difficulty audiences experience in carrying out instructions. This is because instructions are often given without due regard to social and cultural circumstances and constraints which may cause either unwillingness or outright inability to adopt the desired innovations.

For communication to be truly effective, messages need to be designed and developed in relation to the cultural and ethnic backgrounds, lifestyles, tastes, preferences, and communication consciousness of the audience. The way in which the message is presented—the media which are used as the vehicle for disseminating the information—also has a strong bearing on its potential acceptance or rejection. ■

This article is adapted from a paper presented in a course on "Communication Planning and Strategy" held at Cornell University in July 1983.

Andrea Okwesa is Media Officer/Editor at the Caribbean Food and Nutrition Institute, an office of the Pan American Health Organization (PAHO/WHO), at CFNI's Jamaica Centre.

Perspectives on Communication Problems in the English-Speaking Caribbean

by B. A. Okwesa

The Caribbean is fraught with a host of serious socio-economic problems which prevent the majority of people from achieving and maintaining a satisfactory standard of living.

Food and Nutrition Surveys of some countries have identified lack of information on health, food, and nutrition as one of the chief reasons for the prevalence of malnutrition, infectious diseases like gastroenteritis, and nutrition-related diseases like obesity, hypertension, diabetes, and stroke, which are among the leading causes of death in the region. Ignorance and misinformation also make it difficult, if not impossible, for the majority of consumers to make intelligent decisions about food, and to improve their nutritional behavior on the basis of correct, reliable information. The "misinformation" syndrome creates an often unsurmountable barrier to effective communication between source and receiver, in this case the health, food, and nutrition sector and the wider community. Misinformation occurs when the message is either incorrect, incomplete, inconsistent with other messages in the same program, or contradictory, resulting in confusion, bewilderment, and misunderstanding. I would like to suggest that this element of "misinformation" can negate the effectiveness not only of the message, but also of an entire communication program.

I shall cite some examples from the area in which I work which show that in programs aimed at effecting change in attitude or behavior it is very important to ensure two things: (1) the messages are clearly communicated to avoid misunderstanding; and (2) the right infrastructure is in place for the innovation proposed by the message to be carried out, or in other words, for change to occur.

In the Jamaica Nutrition Education Program (JNEP) three strategies were used to communicate the messages—seminars, mass media, and interpersonal communication between field workers and the community. Seminars were planned for all categories of field staff to prepare them for face-to-face contact with the audience. However, evaluation revealed that health staff—in obstetric wards particularly—were giving incorrect and contradictory advice about breastfeeding, which showed that they lacked basic information on the subject. Community health aides and other field staff who were in direct contact with the community at grassroots levels also lost their credibility soon after the campaign had begun. They were unable to answer questions about the program or explain the nutrition information presented in the carefully prepared materials. This aspect of the program was one of its main weaknesses. It indicated a need for more thorough technical updating and advance briefing for all levels of participants on all aspects of a communication program before the start of the program.

In Barbados, the National Nutrition Centre conducted a survey on breastfeeding practices between 1969 and 1981 as part of the country's National Nutrition Survey. Despite an intensified health education campaign, face-to-face instruction in the clinics and extensive use of the Caribbean Food and Nutrition Institute (CFNI) Breastfeeding Package as well as other locally developed materials, a dramatic decline in breastfeeding was recorded over the 12-year period.

Misinformation and misunderstanding among mothers were identified as the chief reasons for the failure of breastfeeding. This was evident in the startling increase in the number of babies being bottle-fed as early as one month or who were completely weaned off the breast by three months. This "misinformation" syndrome also included giving mothers a type of information on which they were unable to act for various social, cultural, domestic, emotional, or psychological reasons. For example, mothers were urged to "breastfeed baby whenever he is hungry." This is a nutritionally sound message, but could they do this even if they wanted to? Was there a strong social support system to help them translate intent into action? The answer to both questions is a resounding NO. Instead:

- There was strong social objection to breastfeeding in buses and other public places.
- Many mothers had to work outside the home and had to leave their tiny babies at day-care centers during the work-day.
- Breastmilk could not be expressed and stored as refrigerators were not widely available.
- When they got home in the evenings, mothers were expected to cook dinner and look after the other children as well as perform other "wifely" duties, so were too tired to breastfeed.

The survey opened up a real hornet's nest

(continued on page 15)

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